

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
30 June 2005 (30.06.2005)

PCT

(10) International Publication Number  
WO 2005/059192 A1

(51) International Patent Classification<sup>7</sup>: C22C 38/00

[KR/KR]; 339-4, Samrak-Dong, Sasang-GU, Pusan, 617-825 (KR).

(21) International Application Number:  
PCT/KR2004/003107

(74) Agent: KIM, Young-Hwan; 5th Fl, Chogwang Bldg, 1572-15, Seocho-Dong, Seocho-Gu, Seoul, 137-874 (KR).

(22) International Filing Date:  
29 November 2004 (29.11.2004)

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AI, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(25) Filing Language: Korean

(26) Publication Language: English

(30) Priority Data:  
10-2003-0093269  
18 December 2003 (18.12.2003) KR

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

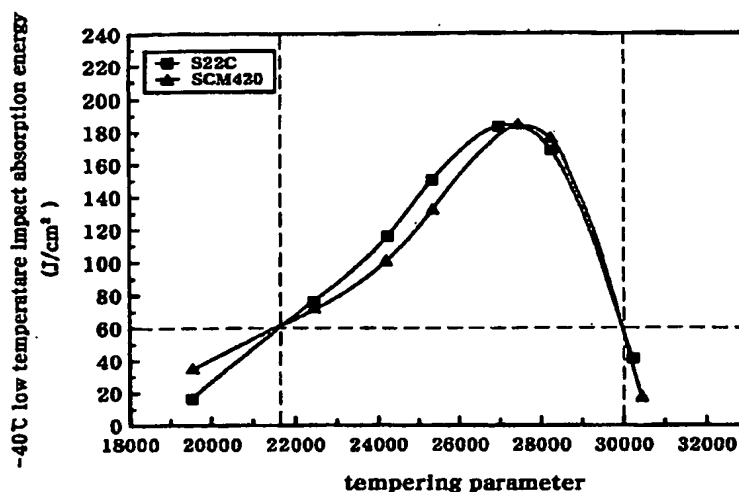
(71) Applicant (for all designated States except US):  
SAMHWA STEEL CO., LTD [KR/KR]; 339-4, Samrak-Dong, Sasang-GU, Pusan, 617-825 (KR).

(72) Inventor; and

(75) Inventor/Applicant (for US only): AHN, Soon-Tae

[Continued on next page]

(54) Title: STEEL WIRE FOR COLD FORGING HAVING EXCELLENT LOW TEMPERATURE IMPACT PROPERTIES AND METHOD OF PRODUCING SAME



(57) Abstract: Disclosed is a steel wire for cold forging, which has excellent low temperature impact properties, and a method of producing the same. The steel wire consists of 0.10 - 0.40 wt% C, 1.0 wt % or less of Si, 0.30 - 2.0 wt% Mn, 0.03 wt% or less of P, 0.03 wt% or less of S, and the balance of Fe and impurities. The steel wire has an austenite grain size of 5 - 20  $\mu$ m, impact absorption energy of 60 J/cm<sup>2</sup> or more at -40°C, and tensile strength of 70 - 130 kgf/mm<sup>2</sup>. A steel material for cold forming according to the present invention has impact toughness that is greatly superior to a conventional spheroidized material or non-heat treated steel at a low temperature of -40°C.

WO 2005/059192 A1